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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,166	12/04/2001	Pavel I. Lazarev	A-71153/AJT	2857
7590	01/26/2005			
FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP Suite 3400 Four Embarcadero Center San Francisco, CA 94111-4187			EXAMINER HON, SOW FUN	
			ART UNIT 1772	PAPER NUMBER

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/006,166	LAZAREV, PAVEL I.	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/12/04 has been entered.

Response to Amendment

Withdrawn Rejections

2. The 35 U.S.C. 102(b) and 103(a) rejections have been withdrawn due to Applicant's amendment dated 11/12/04.

New Rejections

Claim Rejections - 35 USC § 112

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 6-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent parent claim 1 recites that the layer of liquid crystal material has the parameters which provide the interference maximum or minimum of transmission or reflection at

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the exit of the front panel. Therefore it is unclear how the other functional layers can also be providing the interference maximum or transmission at the exit of the front panel.

Claim Rejections - 35 USC § 103

5. Claims 1-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belyaev et al. (EP 0961138 A1) in view of Khan et al. (US 5,764,001).

Regarding claim 1, Belyaev has a liquid crystal information display (abstract) comprising a layer of liquid crystal material between panels of functional layers (first and second plates where at least electrodes and polarizer are positioned) ([0214], page 24, lines 58 and page 25, line 1). Belyaev teaches that the polarizer can have parameters which provide at least one interference maximum or minimum of transmission or reflection for at least one linearly polarized component of incident beam of light (5) ([0270] lines 33-43) at at least one wavelength reflected or transmitted at the output of the polarizer. Belyaev teaches that the means for changing the polarization of the polarized light can also be a layer of liquid crystal ([0285], lines 40-50). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the layer of liquid crystal material with the parameters which provide at least one interference maximum or minimum of transmission or reflection for at least one linearly polarized component of incident beam of light, in place of the polarizer, as taught by Belyaev.

Belyaev teaches that the interference maximum or minimum results in the respective mutual intensification or attenuation of the linearly polarized component of incident beam of light reflected or transmitted ([0270] lines 33-43). This mutual intensification or attenuation is

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desirable at the exit of the front panel on the viewer side, in order to obtain the maximum intensification or attenuation of the respective light beams comprising the display image, as observed by the viewer. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have conducted routine optimization of the parameters of the liquid crystal layer of Belyaev, in order to obtain at least one interference maximum or minimum of transmission or reflection for at least one linearly polarized component of incident beam of light at at least one wavelength reflected or transmitted at the exit of the front panel, for the respective mutual intensification and/or attenuation of the respective light beams comprising the display image, as observed by the viewer.

Regarding claims 2-3, Belyaev teaches that the anisotropic liquid crystal layers (polarizing coatings) are applied on the planarization layers (surface profile smoothening insulation films), and since they also align (orient) the nematic liquid crystal of layer 52 (column 38, lines 45-60), they simultaneously function as alignment layers and color filters (due to their anisotropically absorbing dye nature) (column 8, lines 35-60).

Regarding claims 4-5, Belyaev teaches that when a voltage bias is applied on the electrode layer, the liquid crystal state can be converted to provide no change to the polarization plane direction ([0333], lines 9-11). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the interference maximum or minimum of transmission for the reflected or transmitted light at the exit of the front panel, with or without voltage bias on the electrode layer.

Regarding claims 6-17, Belyaev teaches that the optical thickness of the functional layer provides the interference maximum or minimum ([0056], lines 1-40). This mutual

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intensification or attenuation is desirable at the exit of the front panel on the viewer side, in order to obtain the maximum intensification or attenuation of the respective light beams comprising the display image, as observed by the viewer. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have conducted routine optimization of the optical thickness of the functional layer of Belyaev, in order to obtain at least one interference maximum or minimum of transmission or reflection for at least one linearly polarized component of incident beam of light at at least one wavelength reflected or transmitted at the exit of the front panel, for the respective mutual intensification and/or attenuation of the respective light beams comprising the display image, as observed by the viewer (claims 6-9).

Furthermore, Belyaev teaches that the necessary number of layers does not exceed 10 ([0057], lines 40-45). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have conducted routine optimization of the number and parameters of all the layers in the display of Belyaev, in order to obtain the interference maximum or minimum of transmission at the exit of the front panel, for the mutual intensification and/or attenuation of the respective light beams comprising the display image, as observed by the viewer (claims 10-17).

Regarding claims 18-33, Belyaev teaches that the polarizer is positioned on one of the panels (plates) ([0214], page 24, lines 58 and page 25, line 1). Hence the polarizer is an internal one.

Regarding claims 34-50, Belyaev teaches that the anisotropic layer (page 8, lines 39-59) comprises an oriented (page 11, line 40) layer of organic dye where $\{\text{Chromogene}\}(\text{SO}_3)_n$ is the dye K of Applicant which contains the SO_3^- ionogenic groups which provide its solubility in

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polar solvents in order to form a stable lyotropic liquid-crystal phase, $(M)_n$ is the anti-ion M of Applicant and n is the number of anti-ions in the dye molecule (page 9, lines 45-50). A layer with a thickness of 0.1-0.2 mcm (page 9, lines 40-50) constitutes a film.

Regarding claim 51, due to the liquid crystal nature of the organic dye (column 9, lines 50-55), the film formed by the oriented liquid crystalline dye is crystalline.

Response to Arguments

6. Applicant's arguments with respect to claims 1-51 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

01/21/05

Harold Pyon
HAROLD PYON
1772

1/24/05